

THE INVENTION AS CLAIMED IS:

1. A spare tire handling device adapted for moving a spare tire relative to a vehicle, the device comprising, in combination:
 - a winch apparatus;
 - a flexible member adjacent to the winch, the flexible member having one end attached to the winch and the other end detachably engageable with the tire, the tire being displaceable from an accessible position to a stored position in response to the rotation of the winch in one direction and from the stored position to the accessible position in response to the rotation of the winch in the opposite direction;
 - a wheel retainer member adjacent to the other end of the flexible member, the retainer member having a housing and at least one extending portion being rotatable from a retracted position to an extended position;
 - a stop adjacent the housing, the stop preventing over-rotation of the at least one extending portion beyond the extended position; and
 - a biasing member urging the at least one extending portion toward the extended position.
2. The spare tire handling device as claimed in claim 1 wherein the biasing member is a torsional spring
3. The spare tire handling device as claimed in claim 1 wherein the extended portion is a pair of opposite extended members.
4. The spare tire handling device as claimed in claim 1 wherein the spare tire has a rim including an aperture, the wheel retainer being inserted into the aperture with the extended portion being in the retracted position and as the retainer passes through the aperture, the extended portion is moved by the biasing member toward the extended position to permit engagement of the rim when the winch is rotated in the one direction.
5. The spare tire handling device as claimed in claim 1 wherein the at least one extended portion has a hole, and the housing has an opening, and further comprising:
 - a pivot pin disposed in the hole and the opening to connect the extended portion to the housing, the biasing member is adjacent the pivot pin.

6. The spare tire handling device as claimed in claim 1 wherein the biasing member is a torsional spring member having one end adjacent to the housing and the other end adjacent to the extended portion, and further comprising:
 - a pivot pin connecting the extended portion to the housing.
7. The spare tire handling device as claimed in claim 1 further comprising:
 - a rim spacer member adjacent the rim.
8. The spare tire handling device as claimed in claim 1 wherein the housing further including a secondary lock assembly.
9. The spare tire handling device as claimed in claim 1 wherein the housing further having secondary lock assembly and the spare tire having a rim, the rim including a radial web portion axially oriented with respect to the face of the tire and further comprising:
 - a rim spacer member adjacent the rim, the spacer having a portion forming a hole and an axial extending stand-off portion adjacent the hole, the flexible member being disposed in the hole, the stand-off portion limiting the axial movement of the wheel retainer into the radial web portion of the rim so that with face of the tire in one position, the extended portion passes through the aperture in the rim and with the face of the tire in another position, the extended portion is prevented from passing through the aperture.
10. The spare tire handling device as claimed in claim 1 wherein the tire having a rim portion, the rim portion including a recess, and further comprising:
 - a rim spacer member adjacent the rim, the spacer member having a radial wing portion contacting the recess to orient the rim spacer in the rim.
11. The spare tire handling device as claimed in claim 1 further comprising:
 - a rim spacer member adjacent the tire, the rim spacer member being sized to permit a predetermined size of tire to be accommodated by the spare tire handling device.
12. A spare tire handling device mounted on a vehicle and adapted for moving a spare tire between a stored and an accessible position relative to the vehicle, the device including a winch member and a flexible member attached at one end to the winch member and the other end detachably engageable with the spare tire whereby the tire is displaceable from the accessible to the stored position in response to the operation of the winch member in one direction and from the stored to the accessible position in response

to the operation of the winch member in the direction opposite to the one direction, the device comprising, in combination:

a tire carrier having a housing and at least one extending portion pivotally connected to the housing, the extending portion being movable from a retracted position to an extended position; and

a biasing member biasing the extending portion toward the extended position.

13. The spare tire handling device as claimed in claim 12 further comprising:

a pivot pin connecting at least one extending portion to the housing, the biasing member being disposed about the pivot pin.

14. The spare tire handling device as claimed in claim 12 wherein the housing having a secondary latch.

15. The spare tire handling device as claimed in claim 12 further comprising:

a saddle member adjacent to the housing; and

a stop in the saddle member to prevent over-rotation beyond the extended position and a second stop member to prevent over-rotation beyond the retracted position.

16. The spare tire handling device as claimed in claim 12 further comprising:

a rim spacer member adjacent the tire, the rim spacer having an axial standoff portion.

17. A method of handling a spare tire with a rim for a vehicle, the method comprising:

providing a winch member;

placing a flexible member adjacent the winch, the flexible member having one end attached to the winch member and the other end detachably engageable with the tire, the tire being displaceable from an accessible position to a stored position in response to the rotation of the winch in one direction and from the stored position to the accessible position in response to the rotation of the winch in the opposite direction;

positioning a wheel retainer member adjacent to the other end of the flexible member, the retainer having a housing and at least one radially extending portion pivotally connected to the housing, the portion being rotatable from a retracted position to an extended position to engage the rim; and

urging the extending portion toward the extended position with a biasing member.

18. The method of handling a spare tire as claimed in claim 17 further comprising:

- positioning a rim spacer adjacent the housing.
19. The method of handling a spare tire as claimed in claim 17 wherein the housing having a secondary latch member.
 20. The method of handling a spare tire as claimed in claim 17 wherein the housing having a stop to prevent over-rotation of the extended portion beyond the extended position.